

IN THE CLAIMS:

1. (Currently Amended) A node system for increasing the capacity of a wavelength division multiplexing (WDM) system, said node system comprising: means for interleaving a plurality of optical signals received therein into a predetermined number of channels having respective outputs, said means having at least one preliminary output terminal for respectively outputting an output of said outputs; at least one demultiplexer respectively coupled to another one of the said outputs and of said channels for demultiplexing said optical signals received via said another one of said the outputs into a prescribed number of channels; at least one multiplexer for multiplexing the respective demultiplexed optical signals outputted from the prescribed channels of said demultiplexer; means for deinterleaving the optical signal outputted from said multiplexer to be forwarded to a next node; at least one upgrading demultiplexer for demultiplexing the optical signal outputted from the respective preliminary output terminal; and at least one upgrading multiplexer for multiplexing the demultiplexed optical signal outputted from the respective upgrading demultiplexer, wherein the preliminary coupled to the interleaving means, an output terminal is without forward connection, is for to which output of outputting at least an additional channel for an additional, interleaved optical signal, and is to be coupled, for future connection of the terminal to an additional a respective demultiplexer of the at least one upgrading

demultiplexer in the event the system is expanded so as to provide said forward connection.

2. (Currently Amended) A node system for increasing the capacity of a wavelength division multiplexing (WDM) system, said node system comprising: means for interleaving a plurality of optical signals received therein into a predetermined number of channels having respective outputs, said means having at least one preliminary output terminal for respectively outputting an output of said outputs; a plurality of demultiplexers respectively coupled to others of said the respective outputs output of said predetermined channels and for demultiplexing the output optical signal from said respective channel into a prescribed number of channels; a plurality of multiplexers for multiplexing the respective demultiplexed optical signals from said plurality of demultiplexers; means for deinterleaving said optical signals outputted from the respective output of said plurality of multiplexers, the output of said deinterleaving to be forwarded to a next node; at least one upgrading demultiplexer for respectively demultiplexing the optical signals outputted from said at least one preliminary output terminal; and at least one upgrading multiplexer for multiplexing the demultiplexed optical signal outputted from the respective upgrading demultiplexer, wherein the preliminary coupled to the interleaving means, an output terminal is without forward

connection, ~~is for to which output of outputting~~ at least an additional channel for an additional, interleaved optical signal, ~~and is to be coupled, for future connection of the terminal to a respective demultiplexer of the at least one upgrading an additional~~ demultiplexer in the event the system is expanded so as to provide said forward connection.

3. (Currently Amended) A method for increasing the capacity of a wavelength division multiplexing (λ WDM) system of the type having a pair of interleaver and deinterleaver and at least one pair of multiplexer and demultiplexer disposed between said interleaver and said deinterleaver, the method comprising the steps of: upon receiving a plurality of optical signals from different sources by said interleaver, interleaving said received optical signals into a predetermined number of channels; demultiplexing, by said demultiplexer, said interleaved optical signals received from the respective said predetermined channel into a prescribed number of channels; multiplexing, by said multiplexer, said demultiplexed optical signals received from the respective said prescribed channel of said demultiplexer; deinterleaving said multiplexed optical signals into one transmission channel to be forwarded to a next node; and, providing the interleaver with an output terminal without forward connection, to which output of at least an additional channel for an additional, interleaved optical signal is to

be coupled, for future connection of the terminal to an additional demultiplexer in the event the system is expanded so as to provide said forward connection.

4. (Currently Amended) The node system of claim 1, further comprising, coupled to the deinterleaving means, an input terminal without backward connection, to which, in said event, ~~said~~ output of said at least an additional channel, after demultiplexing by said additional demultiplexer and multiplexing by an additional multiplexer, is to be routed.

5. (Previously Presented) The node system of claim 4, further comprising, coupled to the deinterleaving means, at least one other input terminal without backward connection, to which, in the event the system is expanded to provide the other backward connection, output of at least another additional channel, after demultiplexing by another additional demultiplexer and multiplexing by another additional multiplexer, is to be routed.

6. (Previously Presented) The node system of claim 5, further comprising, coupled to the interleaving means, at least one other output terminal without forward connection, to which, in said event the system is expanded to provide the other backward connection, said output of at least another additional channel, after said demultiplexing

by another additional demultiplexer and said multiplexing by another additional multiplexer, is to be routed.

7. (Previously Presented) The node system of claim 1, further comprising, coupled to the interleaving means, another output terminal without forward connection, to which output of at least another additional channel for another additional, interleaved optical signal is to be coupled, for future connection of said another output terminal to another additional demultiplexer in the event the system is expanded so as to provide the forward connection for said another output terminal.

8. (Currently Amended) The node system of claim 2, further comprising, coupled to the deinterleaving means, an input terminal without backward connection, to which, in said event, ~~said~~ output of said at least an additional channel, after demultiplexing by said additional demultiplexer and multiplexing by an additional multiplexer, is to be routed.

9. (Previously Presented) The node system of claim 8, further comprising, coupled to the deinterleaving means, at least one other input terminal without backward connection, to which, in the event the system is expanded to provide the other backward connection, output of at least another additional channel, after demultiplexing by another

additional demultiplexer and multiplexing by another additional multiplexer, is to be routed.

10. (Currently Amended) The node system of claim 9, wherein said at least one preliminary output terminal, said at least one upgrading demultiplexer, and said at least one upgrading multiplexer comprise, correspondingly, at least two preliminary output terminals, at least two upgrading demultiplexers, and at least two upgrading multiplexers~~further comprising, coupled to the interleaving means, at least one other output terminal without forward connection, to which, in said event the system is expanded to provide the other backward connection, said output of at least another additional channel, after said demultiplexing by another additional demultiplexer and said multiplexing by another additional multiplexer, is to be routed.~~

11. (Currently Amended) The node system of claim 2, wherein said at least one preliminary output terminal, said at least one upgrading demultiplexer, and said at least one upgrading multiplexer comprise, correspondingly, at least two preliminary output terminals, at least two upgrading demultiplexers, and at least two upgrading multiplexers~~further comprising, coupled to the interleaving means, another output terminal without forward connection, to which output of at least another additional~~

~~channel for another additional, interleaved optical signal is to be coupled, for future connection of said another output terminal to another additional demultiplexer in the event the system is expanded so as to provide the forward connection for said another output terminal.~~

12. (Previously Presented) The method of claim 3, further comprising the step of providing the deinterleaver with an input terminal without backward connection, to which, in said event, said output of at least an additional channel, after demultiplexing by said additional demultiplexer and multiplexing by an additional multiplexer, is to be routed.

13. (Previously Presented) The method of claim 12, further comprising the step of providing the deinterleaver with at least one other input terminal without backward connection, to which, in the event the system is expanded to provide the other backward connection, output of at least another additional channel, after demultiplexing by another additional demultiplexer and multiplexing by another additional multiplexer, is to be routed.

14. (Previously Presented) The method of claim 13, further comprising the step

of providing the interleaver with at least one other output terminal without forward connection, to which, in said event the system is expanded to provide the other backward connection, said output of at least another additional channel, after said demultiplexing by another additional demultiplexer and said multiplexing by another additional multiplexer, is to be routed.

15. (Previously Presented) The method of claim 3, further comprising the step of providing the interleaver with another output terminal without forward connection, to which output of at least another additional channel for another additional, interleaved optical signal is to be coupled, for future connection of said another output terminal to another additional demultiplexer in the event the system is expanded so as to provide the forward connection for said another output terminal.